REMARKS

Applicant is in receipt of the Office Action mailed September 20, 2006. Claims 1-3 have been amended to more clearly and distinctly claim the subject matter, which Applicant regards as the invention. Claims 35-39 have been amended to depend on claim 1. Claims 1-39 are pending. Reconsideration of the present case is earnestly requested in light of the following remarks.

Double Patenting Rejection:

Claims 1 and 35 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 15 and 22 of copending Application No. 11/356674, which, Applicant notes, is a continuation of the present Application. After the first of these cases is allowed, Applicant will file a Terminal Disclaimer in the pending case to overcome this provisional rejection.

35 U.S.C. § 102 Rejection:

Claims 1-34 were rejected under 35 U.S.C. 102(e) as being anticipated by Chapuis et al. (U.S. Patent No. 7,049,798 B2, herein referred to as "Chapuis"). Claim 1 was also rejected under 35 U.S.C. 102(e) as being anticipated by Chapuis et al. (U.S. Patent No. 7,000,125 B2, herein referred to as "Chapuis2"). With respect to these claims, Applicant respectfully traverses this rejection.

The cited reference does not teach or suggest all of the elements of amended claim 1.

Amended claim 1 recites:

> A power delivery management system, the system comprising:

> a plurality of digital power management devices, wherein each of the plurality of power management devices comprises a plurality of functions, wherein each of the plurality of power management devices is operable to provide power to one or more point of load devices; and
>
> a control and communication bus, wherein each one of the plurality of digital power management devices is coupled to the control and communication bus;
>
> wherein each respective one of the plurality of digital power management devices includes a controller operable to control the functions of the respective digital power management device; and
>
> wherein the plurality of digital power management devices are operable to communicate with each other over the control and communication bus to exchange information to coordinate their functions.

The Office Action argues that Chapuis discloses a power delivery management system (20) comprising a plurality of digital power management devices (220, 230, 240 and 250), wherein the plurality of power management devices exchange information over the control and communication bus to coordinate their functions. The Office Action cites column 6, lines 36-52 in support of this argument. Applicant submits that Chapuis does not teach or suggest a plurality of digital power management devices that are operable to communicate with each other over the control and communication bus to exchange information to coordinate their functions. In conjunction, Applicant also submits that The Office Action's interpreting of "coordinating functions", (recited in claim 1), to mean "synchronizing devices", (disclosed in column 6, lines 36-52 of Chapuis), is not supported in either the Present Application or in Chapuis. Applicant further submits that the concept of device synchronization is well known to those skilled in the art and is clearly distinct from the concept of coordinating functions as recited in claim 1 and also disclosed in the specification of the Present Application. Applicant notes that the Present Application provides examples of the functions and of coordinating the functions, whether for a single POL regulator or for multiple POL regulators.

The Office Action interprets the controller's (210) controlling the POL regulators (disclosed in Chapuis), to mean that the POL regulators are exchanging information with each other over the control and communication bus. However, Chapuis discloses a

central controller, which is not recited in claim 1, and Chapuis also explicitly teaches throughout that communication and information exchange takes place between the controller and any given one of the POL regulators, not between the POL regulators themselves. Applicant finds no support in Chapuis of the concept of POL regulators communicating with each other and exchanging information with each other. Rather, Chapuis only teaches information being exchanged between any given one of the POL regulators (220, 230, 240 and 250) and the power supply controller (210). In fact, Chapuis clearly teaches that it is the controller (210) that monitors the POL regulators in addition to each POL regulator potentially controlling its own functions independently of other POL regulators. This is in contrast to the POL regulators exchanging information to coordinate their functions as recited herein.

As previously argued, synchronization of devices using a common clock signal is distinct from the concept of coordinating functions or sets of functions as taught in the Present Application. Accordingly, column 6, lines 36-52 of Chapuis simply disclose a method of communicating over a single-wire serial bus by propagating a clock signal over the serial bus to synchronize the various communicating devices, i.e. the POL regulators and the controller. The specification of Chapuis therefore merely discloses that the devices might communicate (with the central controller) over a serial bus but offers no specific or general teaching or support for the concept according to which the POL regulators explicitly communicate with each other to exchange information to coordinate their functions. Synchronization of devices attached to a serial bus does not in itself imply or suggest the manner in which the devices may communicate with each other therewith. However, the presence of the controller in the system disclosed by Chapuis, taken together with the only method of transmitting information taught in figure 5, is indicative of Chapuis teaching away from a system configuration in which the POL regulators are enabled and configured to coordinate their functions, since such coordination is performed by the controller I the system of Chapuis. Chapuis is very clear on the specific role of the controller in managing the system from a central location, whether the controller is configured outside or inside a POL regulator, while each POL regulator is merely operable to control its own functions (see column 5, lines 47-58).

For example, in column 2, lines 5-41 of the Summary section, Chapuis distinctly states that embodiments of its invention operate in accordance with a power supply controller (therefrom referred to as "controller" by Chapuis) and at least one POL regulator, each POL regulator including a control unit and a storage device, where the controller is adapted to provide initial-configuration data to each POL regulator, with the initial-configuration data received by the POL control unit and stored in the storage device, then used to produce a desired output of the POL regulator. Communication is between the controller and the POL regulator over the serial bus, as the POL control unit is configured to provide at least a portion of the fault-monitoring data to the controller, not to other POL regulators. In response to receiving the data, the controller may respond by performing a particular action if the fault monitoring data violates a known parameter. The particular action performed by the POL's control unit in response to a violation is exemplified as disabling the POL regulator [in which it is configured] or notifying the controller.

Chapuis provides clear details and further support for the teachings found in the Summary as interpreted above. For example, Chapuis reiterates that a controller communicates with a plurality of POL regulators via a bus (see column 4, lines 19-20), that the controller is adapted to provide initial-configuration data to each POL regulator (see column 4, lines 51-53), that once the initial-configuration data is received, the POL control unit may store at least a portion of the initial-configuration data in the storage device (see column 4, lines 64-67), and that at least a portion of the stored initial-configuration data is then used to produce a desired output by the POL regulator (see column 5, lines 7-9). Chapuis provides no teaching, and, in accordance with the presence of the controller, provides no motivation for configuring a system in which the POL regulators either communicate with each other or exchange information with each other, because the controller performs the monitoring of all the POL regulators.

This is also underscored by the figures disclosed by Chapuis. Figure 2 clearly shows a power supply controller (210) coupled to the bus (whether as an individual component or as part of an additional device, e.g. another POL regulator – see column 4, lines 27-30), and the flowchart of figure 7 clearly shows in step 750 that at least a portion of the fault-monitoring data is provided to the power supply controller. Chapuis does not

teach or suggest or provides a motivation for alternate embodiments that do not include the controller for coordinating and/or controlling the functions of the POL regulators. In other words, Chapuis is silent on the concept of the POL regulators communicating with each other to exchange information to coordinate their functions. This distinction is further underscored by the configuration of the components disclosed by Chapuis, individually and within the system. For example, the POL regulators of Chapuis each include a "control unit" as shown in figures 3-1 and 3-2 (comparable to the "controller" recited in claim 1), while an additional and distinct controller (separate from the "control unit") is responsible for monitoring the POL regulators, hence managing the system.

Information received by the POL regulators from sources other than the controller is explicitly disclosed by Chapuis as comprising fault monitoring data, which, as Chapuis also clearly indicates, originates from an external device or sense circuit corresponding to the given POL regulator (see figure 3-2, which discloses an example of the configuration of sense circuit 330), with the fault monitoring data containing information on the given POL regulator or its output (see column 5, lines 13-17). Regarding the utilizing of the fault-monitoring data, Chapuis explicitly teaches communication between the controller and any given one of the POL regulators. More specifically, Chapuis teaches that the controller sends a request for fault-monitoring data to the POL control unit, the POL control unit provides the requested fault-monitoring data to the controller, the controller uses the requested fault-monitoring data to monitor at least one parameter of the POL regulator, and determines whether the monitored parameter violates a known parameter (see column 7, line 55 to column 8, line 3). It is thus clear from the specification, including the figures, that Chapuis teaches a controller performing the monitoring of the POL regulators, and any coordination of the functions of the POL regulators (see also column 8, lines 18-33).

Summarily, Chapuis provides no teaching or motivation for a plurality of digital power management devices that are operable to communicate with each other over a control and communication bus to exchange information to coordinate their functions, and teaches away from such a concept by the inclusion of a central controller used for monitoring the POL regulators.

Examiner further argues that Chapuis2 also teaches a plurality of digital power management devices that are operable to exchange information over a control and communication bus to coordinate their functions, and cites column 5, lines 1-49 of Chapuis2 in support of this argument. However, Examiner again interprets "coordinating functions" to mean "synchronizing devices", and again proposes that the controller communicating with any given one of the POL regulators is equivalent to the POL regulators exchanging information with each other over the control and communication bus. Applicant submits that for at least the reasons presented above in regards to Chapuis, these interpretations are incorrect and are not supported in either the Present Application or in Chapuis2.

Furthermore, Chapuis2 clearly discloses distinct multiple buses coupling selected ones of the POL regulators to each other (in contrast to claim 1, which discloses a single bus), each bus serving a different function. In Figure 3 of Chapuis2, an intra-device interface is provided between individual ones of the POL regulators to control specific interactions, such as current share or paralleling, e.g., current share interface (CS1) provided between POL0 106 and POL1 108, and CS2 provided between POL4 112 and POLn 114 (see column 4, lines 45-49). Chapuis2 also discloses a controller (102) distinct from the POL regulators, which communicates with the POL regulators by writing and/or reading digital data via a serial bus, illustrated in FIG. 3 as the synch/data bus (see column 5, lines 1-5). In addition, Chapuis2 states that one of the functions of the system controller is fault management (one example of "coordinating functions" as disclosed in the Present Application), which is achieved through the system controller's communicating with the POL regulators over a second bus (OK/fault bus in figure 3) that is distinct from the synch/data bus (see column 5, lines 11-15). It is clear from these teachings that the intra-device interfaces (CS1 and CS2) are therefore also clearly distinct from both the OK/fault bus and the synch/data bus, and that the current-share interfaces are not meant to be interpreted as comprising a control and communication bus, given that Chapuis2 clearly identifies the OK/fault bus and the synch/data bus as control and communication buses, and clearly identifies the current share interface as being specifically configured to allow POL regulators to operate in parallel to produce a single

output voltage (see column 4, lines 45-57), not to communicate with each other to exchange information.

In accordance with the configurations described above, Chapuis2 teaches four different modes of operation, and specifically states that when the POL regulators operate as an array, the behavior of each POL regulator, and the array as a whole, are coordinated by a system controller (see column 7, lines 29-31). Furthermore, even in the presence of local control over certain functionality in addition to the central control performed by the controller, the system controller is still responsible for coordinating the functions of the POL regulators (see column 7, lines 40-45). It is therefore clear that Chapuis2 neither teaches, nor suggests a system in which a plurality of digital power management devices are operable to communicate with each other over a control and communication bus to exchange information to coordinate their functions.

For at least these reasons, Applicant submits that the combinations of features recited in claim 1 are not anticipated by Chapuis and/or Chapuis2. Applicant also submits that since independent claim 1 has been shown to be patentably distinct, respective dependent claims 2-34 are also patentably distinct for at least the same reasons.

Claims 35-39 were rejected under 35 U.S.C. 102(e) as being anticipated by Chapuis et al. (U.S. Patent Publication No. 2004/0093533 A1), and also by Duffy (W.O. International Publication No. 02/31943). Claims 35-39 have been amended to depend on claim 1. Since claim 1 has been shown to be patentably distinct, respective dependent claims 35-39 are also patentably distinct for at least the same reasons as given above.

Accordingly, Applicant respectfully requests removal of the 35 U.S.C. § 102(e) rejection.

CONCLUSION

Applicant submits the application is in condition for allowance, and an early notice to that effect is requested.

If any extensions of time (under 37 C.F.R. § 1.136) are necessary to prevent the above-referenced application(s) from becoming abandoned, Applicant(s) hereby petition for such extensions. The Commissioner is hereby authorized to charge any fees which may be required or credit any overpayment to Meyertons, Hood, Kivlin, Kowert & Goetzel P.C., Deposit Account No. 50-1505/5900-00101/JCH.

Also filed herewith are the following items:

☐ Request for Continued Examination

☐ Terminal Disclaimer

☐ Power of Attorney By Assignee and Revocation of Previous Powers

☐ Notice of Change of Address

☐ Other:

Respectfully submitted,

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